SEDRIS™ Update

http://www.sedris.org

ASNE MSEA Internal Review

28 August 2003

SEDRIS Objectives

- ***Articulate and capture the complete set of data elements and associated relationships needed to fully represent environmental data:***
- ***Provide a standard interchange mechanism to pre-distribute environmental data and promote database reuse among heterogeneous applications.***
- ***Support the full range of applications across all environmental domains (terrain, ocean, atmosphere, and space) and 3-D models of the physical environment.***

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Technology Components of SEDRIS

- ***Data Representation Model (DRM):*** **Provides syntax and structural semantics for representing environmental data and databases (the "grammar" of the language)**
- ***Environmental Data Coding Specification (EDCS):*** **Provides "thing" level semantics (the "dictionary" of the language) (classify/attribute scheme)**
- ***Spatial Reference Model (SRM):*** **Unified and robust description of the coordinate systems, along with an accurate, efficient, and fast software implementation**
- ***SEDRIS Interface Specification:*** **(Read and Write Application Program Interfaces (APIs))**
  - **Allows ease of access**
  - **Lowers the barrier-to-entry in software development**
- ***SEDRIS Transmittal Format (STF)*****: Platform independent storage and transmission of data**

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ISO / IEC Standards

- **18023: *SEDRIS* – multi-part -**
  - ***Part 1: SEDRIS Functional Specification*** **(includes the Data Representation Model and the Interface Specification)**
  - ***Part 2: SEDRIS Abstract Transmittal Format***
  - ***Part 3: SEDRIS Transmittal Format Binary Encoding***
- **18024: *SEDRIS Language Bindings* – multi-part, initially -**
  Part 4: SEDRIS Language Binding to ISO C
- **18025: *Environmental Data Coding Specification (EDCS)***
- **18026: *Spatial Reference Model (SRM)***
- **18041: *EDCS Language Bindings* – multi-part, initially -**
  Part 4: EDCS Language Binding to ISO C
- **18042: *SRM Language Bindings* – multi-part, initially -**
  Part 4: SRM Language Binding to ISO C

International Organization for Standardization

International Electrotechnical Commission

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Standards Progress

- ***EDCS*** **- advanced to Final Draft International Standard (FDIS) release for international vote – December 2003 – International Standard (IS) in 2004**
- ***SRM*** **- advanced to Committee Draft (CD) – review in December 2003 – Final Committee Draft (FCD) – review in July 2004 – FDIS release in November 2004 – IS in 2005**
- ***SEDRIS Multi-Part*** **- advanced to CD (all parts) – review in February 2004 – FCD – review in July 2004 – FDIS in November 2004 – IS in 2005**

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Other Standards Activities

- All SEDRIS Technologies listed in the main part of the *Joint Technical Architecture (JTA) release 5.0* (Also in the M&S Annex)
- *NATO STANAG* development under the NATO M&S Group (NMSG) to commence this year as standards reach ISO / IEC FDIS stage
- Part of the NIMA managed *National Center for Geospatial Intelligence Standards (NCGIS)*.
- SEDRIS technical Components in the *Army Standards Approval and Repository System (ASTARS)*
- EDCS and SRM under review by the *Navy M&S Standards Steering Group (MS3G)*
- SEDRIS Technical Components slated for review under the new *Air Force Agency for M&S (AFAMS) Standards Process*

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SEDRIS OOI

Object Oriented Interface **design in work for all Application Programmer Interfaces in response to Associate Requests and:**

- **Army OneSAF Objective System (OOS)**
- **Army Future Combat System (FCS) Lead System Integrator (LSI) Team testing and the UAMBL**
- **Navy Tactical Environment Data Services (TEDServices)**

Beta release in September

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Next SEDRIS Release

November 2003

- **OOI**
- **Implement EDCS FDIS**
- **Implement SRM CD**
- **Add “relationships” to the DRM to support OOS UHRB requirements**

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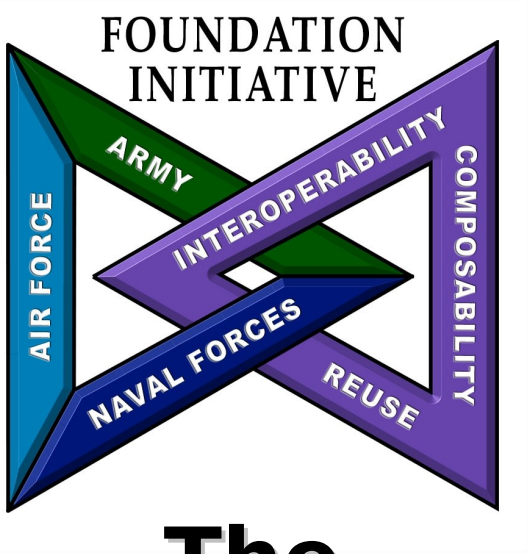

The *Test and Training Enabling Architecture (TENA)* and Its Use of the Spatial Reference Model (SRM)

Ed Powell
TENA Architect

TENA Summary

- **TENA provides an advanced interoperability architecture to the range community**
  - **Many lessons were learned from other architectures, especially HLA**
- **The TENA Meta-Model describes the rules for creating TENA objects**
  - **Much more flexible and extensible than DIS, HLA, other architectures**
- **TENA is also working toward a community-consensus-derived common object model**
- ***TENA standard Time-Space-Position Information (TSPI) objects are going to be defined in accordance with the SRM and include:***
  - ***SRM coordinate conversions inside the objects defined as "local classes"***
  - ***Support for multiple simultaneous interoperable coordinate systems***

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EuroFighter (EF2000) Development

- SEDRIS specified as enabling technology for review in the EF2000 mission planning and training subsystems
- SEDRIS Associates involved with EuroFighter Training and Mission Support Systems include:
  - Indra (Spain)
  - TT&S (United Kingdom, France)
  - Sogitec (France)
  - CAE (Germany)
  - Atlas Electronik (Germany)
- Other key players: Meteor (Italy)

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EDCS Prototype Registry

Steps user are expected to follow

- **Search holdings for same / similar concepts**
- **Research to ensure new concepts use existing concepts**
- **Login as a registered user**
- **Submit new items that comply with the guidelines**
- **Submission batch cut-off dates: March 1, June 1, Sept 1, Dec 1**
- **Registry updates: June 1, Sept 1, Dec 1, March 1**

What users are expected to know

- **EDCS objective and EDCS approach to organizing dictionaries of environmental concepts**
- **Existing (or previously proposed) concepts related to their new item being proposed**
- **Guidelines for construction of definitions and labels**
- **Requirements for including appropriate references**

Who can submit new items **-** the designated member of:

- **any ISO or IEC Technical Committee or Subcommittee**
- **any P-member or O-member of ISO / IEC JTC1 or ISO / IEC JTC1 / SC24**
- **any organization with Cat A / C liaison to ISO / IEC JTC1 or ISO / IEC JTC1 / SC24**

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Review process

- Verify submission is from an authorized and registered user
- Verify proper forms and content for the appropriate proposal are provided
  - Fields are filled in with relevant information
  - Technical content appears reasonable
  - Key aspects of guidelines are followed
  - All necessary information is provided
- If any fail, notify user of problems, and suggest resubmission
- Else, (automatically) enter new submissions into database (in the “Submitted - pending approval” holding), and update the site
- Forward package to Review Board
- Notify submitter that submission(s) have been accepted, and forwarded for review and subsequent approval/rejection
- If submission is after quarterly deadline, inform the submitter the submission will be included in the registry update after next
- If submission is before quarterly deadline BUT the submissions are more than what can be processed in remaining time by the review board, inform the submitter the submissions will be included in the registry update after next

Duration: hours to one day

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Review Board Process

- Assign a lead for the review of new proposal
- Review and verify technical content, rationale, and merit of new proposal
- Verify definitions, label, and other fields meet guidelines
- Review concept in contrast to other existing concepts
- Verify new item properly uses existing concepts, if applicable
- Assemble/consult subject matter experts for review, if needed
- Engage submitter, if needed
- Document findings from review, produce written response and rationale for approval or rejection
- Notify Review Board of the findings
- Conduct a final review session with the Review Board
- Upon agreement from Review Board, notify submitter of approval or rejection
- Send all accepted registry submissions to administrator for update of the registry database

Duration: depending on number of items in a package, Quarterly

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SEDRIS Technology Conference

STC 2004

January 5-9

Orlando Disney Hilton

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METOC Data Sets

- ***Atmospheric Forecast Data***
- ***Atmospheric Observations***
- ***Ocean Forecast Data***
- ***Ocean Observations***
- ***Climatology***
- ***Bathymetry***
- ***Marginal Ice Zone***

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Space Data Sets

- ***Ionospheric Scintillation***
- ***Electron Density Profile***
- ***Solar Energetic Particles***
- ***Solar Electromagnetic Emissions***
- ***Magnetospheric Plasma***
- ***Geomagnetic Fields***
- ***Solar Wind***
- ***Auroral Emissions***
- ***Interplanetary Magneti Fields***
- ***Auroral Precipitating Particles***
- ***Cosmic Rays***
- ***Auroral Electrojet***
- ***Total Electron Count (Vertical)***
- ***Neutral Density***
- ***Trapped Energetic Part***

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For more information …

- **Visit the SEDRIS web site *(http://www.sedris.org), where you'll find detailed information on:***
  - **SEDRIS technology components (EDCS, SRM, DRM, APIs)**
  - **Proceedings from past conferences**
  - **Download SEDRIS SDK releases**
  - **Tools**
  - **Papers, references, videotapes of tutorials, and more**
- **Get answers to questions through the help line:**
  - ***help@sedris.org*** **(technical topics)**
  - ***se-mgmt@sedris.org*** **(other topics)**

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